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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,347	02/13/2002	Shuji Yonekubo	Q68498	6061

7590 07/28/2004

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EXAMINER	
NGUYEN, LAM S	
ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 07/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/073,347	YONEKUBO, SHUJI	
	Examiner	Art Unit	
	LAM S NGUYEN	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07/26/2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 40-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *41-43* is/are allowed.

6)☒ Claim(s) *1-8,12-16,40,44-46 and 49-52* is/are rejected.

7)☒ Claim(s) *9-11, 47 and 48* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/828,998.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The indicated allowability of claims 40 and 44-46 is withdrawn in view of the newly discovered reference(s) to Miura et al. (US 5988782). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 40, 44-46, 49 are rejected under 35 U.S.C. 102(b) as being anticipated by Miura et al. (US 5988782).

Miura et al. disclose a liquid jetting apparatus (FIG. 1) comprising;

a container-setting portion at which a liquid container is set, the liquid container having a liquid chamber that contains liquid, a head member having a nozzle, a liquid way that can communicate with the liquid chamber of the liquid container set at the container-setting portion and the nozzle (FIG. 2 and column 5, lines 1-18);

a liquid discharging unit that can cause the liquid to be discharged from the nozzle based on information about sedimentation-state of the liquid in the liquid chamber (FIG. 8A: In step S506 the printing is done or not based on the comparison between the time T1 and To, wherein To may be determined to be a period in which sedimentation of ink will not cause significant problem and substantially determined depending upon characteristics on inks (column 9, lines 30-35);

a clock component that knows a present time (FIG. 8A: A clock measures the elapsed time t1 beginning from the previous stirring time (S503) to the current time (T1 in S505));

a sedimentation-state acquiring unit that can acquire the information about sedimentation-state of the liquid in the liquid chamber (FIG. 8A and column 9, lines 30-35: A corresponding unit reads the time period To, wherein To may be determined to be a period in which sedimentation of ink will not cause significant problem);

the liquid discharging controller having:

a calculating part that can calculate a passed time until the present time based on the information about a point of time that is a standard for judgment of the sedimentation-state (FIG. 8A, step S505: The comparators compares T1 and To. If T1 > To, the sedimentation is a state that causes significant problem), and

a main controlling part that can control the liquid discharging unit based on the passed time (FIG. 8A, step S505-506: Based on the elapsed time T1, the printing is done or not),

wherein

wherein the information about sedimentation-state of the liquid in the liquid chamber is information about a point of time that is a standard for judgment of the sedimentation-state (FIG. 8A: In step S506: To may be determined to be a period in which sedimentation of ink will not cause significant problem (column 9, lines 30-35), and

wherein the point of time that is a standard for judgment of the sedimentation-state is a point of time when the liquid container was stirred previous time (FIG. 8A, step S503).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-8, 12-16, and 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Numata et al. (US 5625384) in view of Miura et al. (US 5988782).

Numata et al. disclose a liquid jetting apparatus (FIG. 75) comprising;

a container-setting portion (FIG. 75, element 9) at which a liquid container (FIG. 75, element 8a) is set, the liquid container having a liquid chamber (column 43, line 45: in term of "ink tank") that contains liquid,

a head member having a nozzle (FIG. 48A-B),

a liquid way that can communicate with the liquid chamber of the liquid container set at the container-setting portion and the nozzle (FIG. 75: a corresponding way provides ink from the tank 8a to the nozzle),

a liquid discharging unit that can cause the liquid to be discharged from the nozzle (column 43, line 45-48: a corresponding discharge unit for sucking ink).

Even though, Numata et al. disclose the comprising of a controller that can control the liquid discharging unit based on information about the composition or property of the ink in the ink tank cartridge manufactured a long time ago (column 43, line 50-67), Numata et al. do not clearly disclose that the controller controls the liquid discharging unit based on information about sedimentation-property of the liquid in the liquid chamber and information about

sedimentation-state of the liquid in the liquid chamber, and wherein the point of time that is a standard for judgment of the sedimentation-state is a point of time when the liquid container was stirred previous time (**Referring to claim 8**).

Miura et al. disclose in an inkjet printing apparatus, the printing is controlled based on the comparison of an elapsed time that is a period of time from the previous stirring to the present time (FIG. 8A: T1) (considered as sedimentation-state) with a predetermined time period (FIG. 8A: To), wherein the predetermined time period To is determined to be a period in which sedimentation of ink will not cause significant problem and substantially determined depending upon characteristics on inks, so To is considered as sedimentation-property (column 9, lines 30-35).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify the controller in the printing system disclosed by Numata et al. such that, instead of controlling the liquid discharging unit based on the information about the composition and property of the liquid as a function of time, controlling the liquid discharging unit based on the information about sedimentation-state and property of the liquid as disclosed by Miura et al. The motivation of doing so is to provide an ink jet printing apparatus which can satisfactorily perform printing with employing an ink containing water insoluble dye or dye having low solubility without causing a problem of bubbling as taught by Miura et al. (column 3, line 6-12).

Numata et al. also disclose limitations referring to the following claimed invention:

Referring to claims 2-5, 49-50: further comprising a clock component that knows a present time, and a composition-or-property-state acquiring unit that can acquire the information

about composition-or-property-state of the liquid in the liquid chamber, wherein the information about composition-or-property-state of the liquid in the liquid chamber is information about a point of time that is a standard for judgment of the composition-or-property-state, the liquid discharging controller has a calculating part that can calculate a passed time until the present time based on the information about a point of time that is a standard for judgment of the composition-or-property-state, and a main controlling part that can control the liquid discharging unit based on the passed time, and the point of time that is a standard for judgment of the composition-or-property-state is a date when the liquid container was manufactured (column 43, line 38-50: the type of recovery operation to be performed is decided by the number of months between the manufacturing date and the loading data), wherein the point of time that is a standard for judgment of the composition-or-property-state is a point of time when the liquid container was set at the container-setting portion (column 43, line 62-65: the time that the cartridge is unpacked and loaded in the apparatus).

Referring to claim 6: wherein the information about the point of time when the liquid container was set at the container-setting portion is stored in a storage unit provided in the liquid container, and the composition-or-property-state acquiring unit is adapted to read out the information stored in the storage unit (column 9, line 57-62: the time when the new head is used first is written in a non-volatile memory and a corresponding unit reads this memory to acquire this information).

Referring to claim 7: wherein the point of time that is a standard for judgment of the composition-or-property-state is a point of time when the liquid was jetted previous time (FIG. 6, steps S505-506: a period of time is set since the last suction or last pre-discharge).

Referring to claims 12-13: wherein the liquid discharging unit is a cleaning unit that can cause the liquid to be absorbed from the nozzle or a flushing unit that can cause the liquid to be jetted from the nozzle (FIG. 6: a cleaning unit for suctioning).

Referring to claim 14: wherein the liquid container contains the liquid by containing a foam material filled with the liquid (column 40, line 23-27).

Referring to claim 15: wherein the liquid contained in the liquid container is ink including pigment (column 40, line 14-16: in term of "dye").

Referring to claim 16: wherein the liquid container further has a second liquid chamber that contains second liquid, the head member further has a second nozzle, the apparatus further comprises a second liquid way that can communicate with the second liquid chamber of the liquid container set at the container-setting portion and the second nozzle, the apparatus further comprises a second liquid discharging unit that can cause the second liquid to be discharged from the second nozzle, and the liquid discharging controller can control the second liquid discharging unit based on information about composition-or-property-state of the second liquid in the second liquid chamber (FIG. 73: element 8 has more than one ink container).

Referring to claim 51: wherein the main controlling part is adapted to control the liquid discharging unit when the liquid container is replaced with a new liquid container in such a manner, that a volume of the liquid to be initially discharged is larger when the passed time calculated based on the information about sedimentation-state of the liquid in the liquid chamber of the new liquid container set at the container-setting portion is longer (column 43, line 37-50: Because the longer the passed time is, the higher the concentration of the ink in the connected portion, the amount of ink sucked is increased to ensure stable discharge).

Allowable Subject Matter

2. Claims 41-43 are allowed and claims 9-11 and 47-48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Referring to claims 9, 41: The most pertinent cited prior art fails to disclose the comprising of a liquid-end determining unit that can determine a liquid end based on the information about a point of time that is a standard for judgment of the sedimentation-state and the liquid consumption.

Referring to claim 47: The most pertinent cited prior art fails to disclose wherein the main controlling part is adapted to control the liquid discharging unit when the liquid container is replaced with a new liquid container in such a manner, that a volume of the liquid to be initially discharged is larger when the passed time calculated based on the information about sedimentation-state of the liquid in the liquid chamber of the new liquid container set at the container-setting portion is longer.

Referring to claims 48: The most pertinent cited prior art fails to disclose a main controlling part that can estimate the sedimentation-state based on the information about a point of time that is a standard for judgment of the sedimentation-state and information about easiness of sedimentation of the sinkable constituent in the liquid, and that can control the liquid discharging unit based on the estimated sedimentation-state.

Claims 10-11, 42-43 are allowable because they depend directly/indirectly on claim 9 or 41.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (571)272-2151. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEPHEN D MEIER can be reached on (571)272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LN
July 23, 2004

HAI PHAM
PRIMARY EXAMINER